BEDSIDE MEDICINE FOR BEDSIDE DOCTORS

An open forum for brief discussions of the workaday problems of the bedside doctor. Suggestions for subjects and discussants invited.

THE TREATMENT OF RINGWORM

Samuel Ayres Jr., Los Angeles—The successful treatment of ringworm affords an excellent opportunity for the practice of the art of medicine. The science of the matter is very simple: the disease is caused by a fungus; the cure consists in killing the fungus. Any problem is rendered less complicated if at least one of the important factors remains constant. In the case of ringworm I propose to make the medication a constant, varying the other procedures to suit the particular variety and location of the disease. The antiparasitic application having probably the widest range of usefulness in this disease is known as Whitfield's ointment, which consists of the following:

Salicylic acid	2	
Benzoic acid	4	
Benzoinated lard	30	mx

Exceptional cases may be encountered which may not respond to this treatment, but if the proper technique is observed, they will be extremely few.

Ringworm of the scalp, or tinea capitis, presents two common clinical varieties, the small spore type with sharply defined scaly areas in which the hair is broken off close to the scalp, and the large spore type with patchy scaling but with a more diffuse involvement, relatively few hair stumps and no definite areas of baldness. Either of these types may acquire a secondary bacterial infection with large, swollen, inflamed areas surmounted by follicular pustules. The following technique will usually result in a cure in about six weeks:

Epilation. The diseased hairs must be removed to get rid of infected material, since the fungus is mostly on the outside of or within the hair itself, extending a considerable distance below the surface of the skin, and to allow medication to penetrate more easily into the follicle. Mechanical epilation by means of epilating forceps, adhesive plaster or wax are satisfactory if carried out intelligently. It is advisable to demonstrate the method of epilation before the parent and to insist that the parent continue the process every day, and to check up on the progress at least once a week. After the first epilation has been accomplished, the entire scalp should be shaved. This makes it possible not only to treat the affected areas, but to prevent new areas from developing by applying the ointment to the entire scalp and vigorously rubbing in for at least five minutes twice a day. If this should irritate the scalp after a few days, it may be omitted for a short time, substituting a milder preparation, s uch as 2 per cent ammoniated mercury ointment, resuming when the irritation subsides.

Headgear, such as combs, brushes, hats, etc., should be discarded. Skull caps made of clean muslin should be worn day and night to keep the ointment in contact with the scalp, to protect the hats and pillows from contamination, and to keep the child from scratching or handling the diseased areas. The skull cap should be changed each twenty-four hours, boiling the old one for fifteen minutes before using again.

Secondary infection can be controlled by the temporary application of antiseptic wet dressings and exposure to the ultra-violet light.

The physician should exercise careful supervision and should continue the treatment for at least two weeks after the disease seems to be entirely cured. The presence of any broken, easily removed hair stumps means that the disease is still present. X-ray has been advocated as an easy method of epilation and it certainly does simplify the treatment, but it is not without danger; the margin of safety between the dose necessary to produce temporary loss of hair and the dose which may result in the permanent loss of hair is not large. In treating a benign disease which will with proper technique respond to more conservative measures, it seems hardly justifiable to take even a small chance of doing irreparable damage. In my opinion epilation by x-ray should be resorted to only in the event of failure of the above method, and that will be extremely seldom. Ultraviolet light does not penetrate sufficiently to affect ringworm deep in the hair follicles.

Ringworm of the glabrous skin or tinea circinata is the common type of ring-shaped lesion frequently produced by contact with an infected cat. Treatment of this type offers no problem. Application of Whitfield's ointment twice a day for about a week usually suffices. Iodin is an old remedy, but the cure is frequently worse than the disease because of its tendency to blister.

Ringworm of the nails, or onychomycosis, is one of the most stubborn types of all. As much of the affected nail as possible should be trimmed away with scissors and the remainder scraped with the edge of a glass slide after applying a drop of 40 per cent KOH to soften the nail substance. This should be repeated at weekly intervals, with the constant application of Whitfield's ointment between scrapings. Gloves which have come in contact with the affected nails should be discarded.

Tinea versicolor, or ringworm of the chest and back, is not so highly contagious as the other types, but is extremely chronic, often persisting for fifteen or twenty years or more. Whitfield's ointment applied twice daily for a week usually cures the condition. After a week's rest it should be applied again for a week. The clothing which comes in contact with the skin should be sterilized.

Epidermophytosis, or eczematoid ringworm of

the hands, feet and genitocrural region, yields quickly to Whitfield's ointment usually within two weeks. Vesicles should be incised to permit easier penetration of the medicament. Three apparent sources of difficulty should be mentioned. Some patients complain that no matter how long they use the ointment, their skin continues to form scales; this is due to the fact that the salicylic acid stimulates exfoliation, which very closely resembles the scaling caused originally by the disease, and which disappears promptly on switching to a milder application. Again, the too prolonged use of Whitfield's ointment may set up a secondary eczematization which takes the place of the original disease. In the third place, an error in diagnosis is occasionally made in pronouncing as epidermophytosis what in reality is a vesicular eczema of the palms and soles. In some instances the two diseases so closely resemble each other that the differential diagnosis rests on finding the parasites microscopically in excised vesicles. Obviously Whitfield's ointment would greatly aggravate any eruption of the eczema group.

Ringworm of the beard, or tinea sycosis (to be differentiated from sycosis vulgaris, a simple pyogenic infection) is treated along the same general lines as ringworm of the scalp, employing epilation of the diseased hairs. Use Whitfield's ointment and alternate with 2 per cent ammoniated mercury when evidence of irritation is seen or with antiseptic wet dressings and ultraviolet light when pustules predominate. Shaving apparatus should be sterilized after each use.

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Hiram E. Miller, San Francisco—It is impossible to write anything of practical value on the general subject of "ringworm" infections of the human body in the short space allotted for this discussion. The diagnosis and treatment of tinea infections of the scalp, beard, groin, body and nails have not materially changed in the last few years. The marked increase in the prevalence of "ringworm" infections of the hands and feet, and the difficulties encountered in successfully combating them, makes ringworm a subject of considerable interest to the general practitioner as well as the dermatologist. I will limit my discussion to this phase of the subject.

There are two general clinical types of "ringworm" infection occurring on the hands and feet: (1) The acute vesicular, and (2) the chronic intertrigenous.

The acute type may develop suddenly in twenty-four to forty-eight hours with perhaps hundreds of pinhead sized vesicles or pustules more or less uniform in size diffusely scattered over the palms and dorsal surfaces of the hands and feet. This type of the disease was frequently classified in former years as a dysidrosis or pompholyx. About the only conditions to be considered in a differential diagnosis of the acute type are (1) eczema, (2) dermatitis from external irritants and (3) pompholyx or dysidrosis.

It is very unusual to find an eczema or a dermatitis from an external irritant involving all four extremities and leaving the rest of the body uninvolved. At the present time it is debatable whether such a condition as pompholyx or dysidrosis exists. Many authorities think that all of them are acute tinea infections. The only way to make a positive diagnosis is to clip the roof off of one of the larger vesicles, preferably from the foot, put it on a slide with 1-20 per cent potassium hydroxide, and demonstrate the fungus under the microscope. This can be done in most of the cases, with a little skill and practice.

The treatment of the disease in the acute stage is tedious and exacting for the patient as well as the physician. Antitinea remedies cannot be used until the acute symptoms have been controlled. Soaking or compressing the areas in ½ to 1 per cent aluminum acetata, or 1-5000 potassium permanganate have been found to be of the most value in this stage of the disease. It should be used for one to two weeks. Then a 1-2 per cent crude coal tar ointment may be resorted to for a week or two before starting specific antitinea remedies. If most of the lesions have involuted one may begin cautiously with 2-3 per cent salicylic acid and 4-6 per cent benzoic acid in petrolatum and lanolin. The strength of these ingredients may be increased as the disease improves, but must be continued with for three to four weeks after it is apparently well, or it will certainly recur.

In the chronic intertrigenous form of the disease there is a white sodden mass of desquamating epithelium between the toes, with a more or less well defined, and at times, vesicular margin. There may be isolated small desquamative areas elsewhere on the feet or hands with a few dried up or active vesicles. This form of the disease may be confused with chronic eczema, psoriasis, syphilis, scabies, etc. A careful search will generally reveal the presence of the fungus in scales or dried up vesicles. In this chronic form of the disease 3 per cent salicylic and 6 per cent benzoic acid in petrolatum and lanolin can generally be used at once and the strength increased as occasion demands. If the sodden areas between the toes do not respond to this therapy, they may be scraped with a dull curette about twice a week and 4 per cent chrysarobin in chloroform applied.

Ideally, it should be a simple matter to cure a specific infection of this type. In practice it is often quite difficult. The ideal remedy must destroy the fungus without appreciably irritating the skin. Unfortunately, such a remedy has not been found. The fungus penetrates quite deep into the keratotic skin of the hands and feet, and to destroy successfully, it may require considerable skill and patience. The large number of drugs suggested in textbooks and medical periodicals for the treatment of "ringworm" of the hands and feet is of itself ample evidence as to the ineffectiveness of most of them.

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Moses Scholtz, Los Angeles—Diagnosis of Ringworm of the Glabrous Skin — One of the most important clinical contributions by clinical dermatology of recent date is the identification and isolation of the group of epidermophytosis, i. e., trichophytosis. Until lately innumerable cases of

this type were regarded as eczemas and intertrigos just because the mycotic dermatoses have a strong tendency to attack intertriginous spaces and assume an eczematoid appearance.

The most common clinical types of epidermophytosis, now definitely established and bacteriologically confirmed, are interdigital vesicular and squamous, plantar and palmar, also the inguinal and axillar. The clinical evidence of these types of epidermophytosis is incredibly common. Here in southern California the spread of epidermophytosis has reached the stage not only of epidermic but actually of endemic.

In view of this it becomes a matter of vast clinical importance to render its diagnosis readily feasible and possible in the hands of the general practitioner. In spite of ample literature on the subject, it is strange that many practitioners seem to be unfamiliar with this important clinical group. The responsibility for this lies, to a great extent, with the current writers who over-emphasize the importance of microscopic and cultural bacteriologic examination and fail to mention and emphasize the clinical differential features of epidermophytosis.

It was my contention in an article published in the *New York Medical Journal and Record* in March, 1926, and conceded since then by many clinicians, that in clinical work the bacteriologic confirmation, though desirable, is not necessary; in fact, in many cases it is unobtainable and that, in the majority of cases, diagnosis can be made on clinical data alone.

The differential morphologic features sufficiently pathognomonic to enable one to make a clinical diagnosis of epidermophytosis are, in my experience, as follows:

In vesicular ringworm the vesicles are large, deep and stay discrete. On the other hand, eczematous vesicles are smaller, more superficially uniform in size, and tend to coalesce into diffuse ill-defined patches.

On being ruptured, trichophyton vesicles dry up quickly, showing a characteristic marginated scaly edge, while eczematous vesicles, on being ruptured, continue to exude serum indefinitely.

Scaly or squamous trichophytosis can be readily recognized by sharply defined borders and circinate or gyrate marginated edges. Here one must look for an "epidermal collarette" consisting of a marginated festooned edge with upturned scales attached to the outer end and free toward the center.

Speaking generally, squamous eczematoid ringworm presents a picture of peripheral desquamation, while in eczema diffuse infiltration and exfoliation throughout the whole area of the patch are dominant morphologic features. Furthermore, eczema has no preferential localization. On the contrary, ringworm has a strong tendency to a selective localization such as, interdigital spaces both on the feet and hands, plantar and palmar surfaces, and inguinal and axillary regions.

As a rule, eczematoid ringworm is more superficial than common eczema, presents much less infiltration and hardly ever lichenification.

These few salient morphologic features, if kept in mind and looked for, offer a sufficient basis for differential diagnosis and clinical identification of the trichophytic nature of an eczematoid looking patch.

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Ernest K. Stratton, San Francisco—I believe that diagnosis of ringworm presents more difficulties to the general practitioner than does its management; for if one is not sure of the infectious nature of any skin disease he invariably hesitates to apply any but soothing medication; however, this disease in all of its phases except the acute vesicular type, which Doctor Miller has already discussed, continues to progress unless attacked by fungicides. Most textbooks on Dermatology recommend many different fungicides, advising the use of one in one part of the body and another in another part. The therapeautic principle is the same wherever used. A peeling preparation such as an ointment or alcoholic lotion containing 5 per cent salicylic acid is used first for the purpose of removing the upper layers of the epidermis, for the fungus is found underneath that layer. Secondly, a preparation for destroying the fungus, as iodin or resorcin, is used in combination or separately.

On the scalp, ringworm must be differentiated from favus, alopecia areata, and syphilitic alopecia. The small-spore ringworm infection of scalp causes the rather large circumscribed areas of partial baldness, presenting many broken off hairs and covered with grayish scales with evidence of inflammation.

Alopecia areata may present the same sized circumscribed areas, but these are devoid of hair and there is no evidence of inflammation.

In the large-spore ringworm infection of the scalp the patches are more numerous, smaller and more irregular in outline, and sometimes resemble the moth-eaten type of alopecia occasionally seen during the secondary phase of syphilis. Ringworm of the scalp occurs very rarely after the age of puberty, and if there is any doubt clinically, the diagnosis can always be confirmed by finding the spores in hair specimens which are properly prepared for microscopical examination. If ringworm infection of the scalp does not respond satisfactorily to medical treatment, then the hair of the entire scalp should be epilated by x-ray after the method of McKee.

On the body, ringworm may resemble lesions of seborrhoeic dermatitis, as well as those of pityriasis rosea, as any of these diseases may present circinate or oval erythematous scaly lesions; clinically the character of the scale, the distribution, the presence or absence of other foci of infection, as well as the subjective symptoms all aid in making a differential diagnosis. In new untreated lesions of ringworm, spores and mycelia can always be demonstrated microscopically. If one finds a case that does not respond satisfactorily to medical therapy, two-fifths of a skin erythema dose of unfiltered x-ray is usually sufficient to clear the skin.

Another Medical Marvel—Apparently they have been having a mad-dog scare in Connecticut—no, that's not what pleased me; it was the announcer who, in closing his description of certain regulations which had been adopted, stated that "Dogs may be left without muzzles for ten days after having been vaccinated against Rabbis."—*Springfield Union.*